

REMARKS

Claims 1-11 were presented for examination. Claims 1-11 stand rejected under 35 U.S.C. 102(e) as being anticipated by United States Patent 5,963,673 (“the ‘673 patent”) issued to Kodama et al. In response, Applicant is amending Claim 9, and submitting new Claims 12–24. Applicant is also amending claims 3, 4, and 7 to remove the multiple dependent claim limitations. Reexamination and reconsideration in view of the remarks contained herein are respectfully requested.

Basis for the amendment to Claim 9 can be found, for example, on page 2, lines 12 to 17 and on page 3, line 13.

Basis for new Claim 12 can be found, for example on page 3, line 15, and basis for new Claim 13 can be found for example on page 3, lines 1-2, and lines 30-32, and in Figures 1 and 2.

Basis for new Claims 14 and 15 can be found for example in original Claims 1 and 9, on page 2, line 16, and on page 4, lines 27-33.

Basis for new Claims 16 to 19 can be found for example on page 3, lines 30-34, page 3 lines 17-29, and on page 4, lines 1-10.

Basis for new Claims 20 to 23 can be found for example on page 6, lines 13-30, and on page 6, lines 4-7.

The disclosure of the ‘673 patent will briefly be considered. There is disclosed a method of video encoding in which the coding mode is adaptively selected according to the amount of data in the encoded output. The Figures and corresponding description in the ‘673 patent therefore show embodiments of a video encoder which receive at their inputs uncoded video, and output an encoded video bitstream, for example to be stored on an optical disc.

The ‘673 patent discloses an encoder that, in the conventional manner, receives an input video signal, compresses that video signal by taking compression coding decisions and outputs the compressed bitstream for distribution. The compression coding decisions are taken wholly within the encoder and the input video signal is not output by the encoder.

Embodiments of the invention provides a system in which compression coding decisions can accompany an uncompressed video signal. A downstream compression encoder can then receive both a video signal and the compression coding decisions appropriate for encoding that video signal. Multiple downstream encoders can receive the same video signal and accompanying compression coding decisions.

One aspect of certain embodiments is a preprocessor, which receives an input video signal and provides the compression coding decisions. This preprocessor is not an encoder

since it does not output an encoded video signal. This is a distinction over the '673 patent. The preprocessor does output a representation of the coding decisions for use in downstream encoding; this is a further distinction over the '673 patent. More, the preprocessor outputs the input video signal; still a further is a distinction over the '673 patent.

In Figures 5 and 9 of the '673 patent, to which the Examiner has referred, the input video exists only at the input, before being encoded through discrete cosine transformation, quantization, and variable length coding. Nowhere in these figures, therefore, can any coding decisions or any representations of coding decisions be output for passage with the input signal along a video pathway. Accordingly, it is submitted that the presently claimed subject matter is both novel and inventive over the '673 patent.

Attention will now be directed to the specific grounds for rejection provided by the Examiner in section 2 of the Final Action. It is respectfully submitted that the Examiner's arguments identifying the claimed integers with features disclosed in the '673 patent are, on careful consideration, technically untenable. The argument does not, therefore, rebut the fundamental distinction drawn above. The Examiner's arguments will be now considered in detail.

The Examiner considers that the '673 patent shows "passing the representation along a video pathway with the input video signal" as 134 of Fig. 5, where the motion vector and macroblock type data are input into the VLC. The Applicant respectfully disagrees with the Examiner. The two signals referenced by the Examiner (motion vector and macroblock type data) are coding parameters. No video signal, let alone the input video signal, is passed with these signals from mode selector 60 to VLC 134 or to motion compensator 144. In fact, no other signal at all is passed with the two referenced signals.

Also regarding Claim 1, the Examiner considers that blocks 111, 112, 146 and 60 constitute "the taking of compression coding decisions in a compression coding step." It is respectfully noted that these blocks, taken alone, cannot constitute a compression coding step, since they do not contain any means for compression coding, and merely perform a subset of the operations of the compression coding step of the '673 patent.

If, when referring to the '673 patent, any teaching of a compression coding step is to be considered, at least some compression stages must be included, such as discrete cosine transformation (118), quantization (120), and variable length coding (124). It is therefore not considered acceptable to consider isolated parts of the compression coder of the '673 patent, or indeed any other compression coder, which alone cannot perform any type of encoding, in comparison to the coding step of Claim 1.

It is submitted then that the motion vector and macroblock type data output from block 60 to VLC 134, cannot be considered to be output from a compression coding step. If anything, these signals represent the input to a compression step, namely variable length coding at 134 of Fig 5.

In a final point concerning Claim 1, the Examiner considers blocks 116, 118, 120 and 124 of Fig 5 of the '673 patent to meet the requirement of Claim 1 of "downstream of the video pathway compression encoding the input video signal." As discussed, however, the Examiner has already considered the video pathway to be the input to VLC 134. From Fig 5, however, it can clearly be seen that blocks 116, 118, 120, and 124 are not in fact downstream of VLC 134.

The Examiner's rejection of Claim 1 is therefore respectfully traversed, and Claim 1 is considered novel and non-obvious over the cited art.

Turning now to apparatus Claim 9, the Examiner considers that the '673 patent shows "means for outputting, from the compression pre-processing apparatus, the processed coding decisions for passage with the video signal along a video pathway" as block 50 (assumed to mean 150) of Fig 9 of the '673 patent. The Applicant respectfully disagrees with the Examiner. The two outputs of mode selector 150 are both coding parameters, and are not accompanied by any video signal. Indeed there is no video extending from block 150. In an attempt to further emphasize this distinction, Claim 9 has been amended to specify that it is the input video signal with which the coding decisions are passed along a video pathway.

Again concerning Claim 9, the Examiner considers that blocks 111, 112, 146 and 63 (assumed to mean 62) of Fig. 9 of the '673 patent constitute the coding means of the pre-processing apparatus of the present invention. It is respectfully submitted that these referenced blocks are only a part of the coding means of Fig 9, and cannot constitute a coding means in themselves.

The pre-processing apparatus of Claim 9 includes coding means. Therefore, if Fig. 9 of the '673 patent is to be linked to such a pre-processing apparatus, then the figure must be considered as a whole, or at the very least as a functional unit which can perform coding (i.e., including blocks 118, 120, 124). It can be seen that Fig 9 contains no functional unit, which includes coding means, from which coding decisions are output. It is reiterated that, even if coding decisions were output, nowhere does the '673 patent show means for outputting coding decisions for passage with the input video signal, as recited in Claim 9.

Claim 9 is therefore considered novel and non-obvious over the cited art.

Claims 2-8 and 10-13 are considered novel and non-obvious, at least by virtue of their dependency on Claims 1 and 9 respectively. Nevertheless the Examiner's objections to these claims will be considered, as it is considered that these claims in fact illustrate additional distinctions over the '673 patent.

Concerning Claim 7, the Examiner considers that the step of taking quantizer decisions is met by quantizer control 132 of Fig. 5. In doing so the Examiner is including block 132 in the compression coding step which he has also stated to include blocks 111, 112, 146, and 60, as discussed above. The MBT and motion vector signals mentioned earlier, however, pass from block 60 to block 132 (with variable length coding and buffering as intermediate stages). Since these signals pass between elements of the coding step they cannot be considered to be output from the coding step, as asserted by the Examiner in his previous arguments.

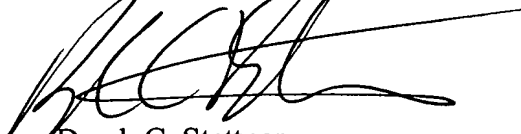
In his rejection of Claim 8, the Examiner considers that the feature of selecting plural bit rates and taking plural quantizer decisions is taught by the '673 patent, and makes reference to block 131 (assumed to mean block 132) of Fig 1. It is not seen how mere mention of a quantizer controller can be considered to anticipate the specific feature of selecting plural bit rates as claimed in Claim 7, and as explained, for example, on page 6 lines 4 to 8 of the description. It is also noted at this point that the statement by the Examiner "e.g.,] select plural bit rates from FIFO 126 and Buffer 50-56 of Fig. 5" does not appear to be a complete thought or argument.

Claim 11 of the present application is directed towards the feature of outputting the processed coding decisions by modulating bits of the video signal. It is considered that this feature cannot be anticipated by the '673 patent, since, as discussed at length above, nowhere in the '673 patent are coding decisions and a video signal present along the same video path. It is not understood how the Examiner's argument, that "MBT has more least significant bits" relates to the features of Claim 11.

CONCLUSION

In view of the foregoing, the Applicant respectfully requests that the current objections and rejections be rescinded and that a notice of allowance be issued. The undersigned is available for telephone consultation during normal business hours at (414) 271-6560.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Derek C. Stettner', with a long horizontal flourish extending to the right.

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